IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 5, Issue 1, August 2025
Impact Factor: 7.67

Redefining Sustainable Urban Mobility through AI: Enhancing Managerial Strategies for Electric Vehicle Adoption

Nivedita Prajapati[1] and Bharat Bhati[2]
Research Scholar, SAGE Institute of Management Studies, SAGE University, Indore[1]
Research Supervisor and Associate Professor, SAGE Institute of Management Studies SAGE University, Indore[2]

Abstract: *This study explores the integration of artificial intelligence (AI) into electric vehicle (EV) ecosystems, emphasizing its transformative impact on urban mobility. With EV sales surpassing 17 million units globally in 2024 and projections exceeding 20 million by 2025, the need for intelligent infrastructure and strategic management has intensified. Drawing on peer-reviewed research and global industry data, this paper examines AI's role in smart charging, predictive maintenance, route optimization and infrastructure planning. Findings reveal that AI adoption among EV manufacturers and charging operators exceeds 65% and 80%, respectively, contributing to cost reductions of up to 40% and increased grid efficiency. Urban case studies, including China, India and the EU, highlight scalable strategies and policy alignment critical to success. While AI offers substantial benefits, challenges remain in infrastructure readiness, algorithmic transparency and investment gaps. The paper concludes with actionable managerial implications for policymakers and stakeholders to foster a data-driven, sustainable mobility transition.*

Keywords: *artificial intelligence*

DOI: 10.48175/IJARSCT-28645